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| 09/602,262      | 06/23/2000  | Paul S. Cohen        | YOR9-2000-0131-US1  | 9324             |

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| EXAMINER |
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LERNER, MARTIN

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| ART UNIT | PAPER NUMBER |
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2654

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/602,262

Applicant(s)

COHEN ET AL.

Examiner

Martin Lerner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 to 10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 to 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 to 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The limitation of "without altering the video content" is new matter. Applicants' Specification does not disclose anything expressly about not altering the original video content. Nor can one having ordinary skill in the art deduce anything implicitly about not altering the video content from the originally filed Specification. Apparently, Applicants are improperly attempting to amend their claims in a manner to circumvent the prior art. However, their Specification does not support the claims as now presented. Unaltered video is not a feature that would be conveyed to one skilled in the art as possessed by the inventors at the time the Application was filed.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 to 5, and 7 to 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Chen* in view of *Braida et al.*

Regarding independent claims 1 and 9, *Chen* discloses a sound-synchronized video method and system, comprising:

“processing a video signal to generate a video output comprising at least one time stamped acoustic identification of the content of the audio associated with the video signal along with the video content without altering the video content” – codec CD1 separates the digitized video and audio signals into the digital video and speech components; at the video output of codec CD1, a feature extraction module FE1 extracts mouth information visemes containing the mouth shape and mouth location from the decoded video signal; a memory ME1 stores and time stamps mouth information from the feature extraction module FE1 for phoneme-to-viseme identification (column 2, lines 5 to 47; column 4, lines 36 to 41; Figure 1); according to one embodiment, a viseme is obtained by using a face model to synthesize the mouth area; this is accomplished with a wire frame model (column 4, lines 10 to 25); thus, in this embodiment of *Chen*, the video content is a synthesized wireframe model, so there is no alteration of the original video content;

“processing an audio signal to generate an audio output comprising at least one [time stamped] acoustic identification of the content of said audio signal” – codec CD1 separates the digitized video and audio signals into the digital video and speech components; a phoneme recognition module PR1 divides the incoming speech components into recognizable phonemes; lookup table LT1 maps phonemes into visemes (column 2, lines 5 to 22; column 4, lines 26 to 35: Figure 1);

“synchronizing the video signal to the audio signal by adjusting at least one of the signals to align at least one acoustic identification from the video signal with a corresponding acoustic identification from the audio signal” – video and audio signals that had become unsynchronized are displayed by synchronizing the video frame to produce sound synchronized video (column 4, lines 33 to 63: Figure 2).

Concerning independent claims 1 and 9, *Chen* discloses the video signal is time stamped, but omits time stamping the audio signal. Only one of the audio and video signals is expressly time stamped in *Chen* because visemes are employed as a reference to synchronize the signals. However, it is common in the prior art to assign time stamps to both audio and video data streams for purposes of synchronization to an absolute time reference. *Braida et al.* teaches a related method and system for synchronizing video images to speech elements where time stamps are applied to both audio and video streams. Phone recognition program 44 assigns start and stop times to digital speech samples 32 (column 6, lines 53 to 58), and digital video images also have time stamps which are referenced to the same time (column 12, lines 13 to 29). It would have been obvious to one of ordinary skill in the art to additionally apply time

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stamps to the audio signals as taught by *Braida et al.* in the synchronization method and system of *Chen* for the purpose of providing an absolute time reference for synchronization.

Regarding claim 3, *Chen* discloses phoneme recognition module PR1 produces visemes ("the audio identification") from the audio signal and feature extraction module FE1 extracts corresponding mouth information visemes from lookup table LT1; the output video is applied to display DI1 together with the audio signal and produces lip synchronization (column 2, lines 11 to 38: Figure 1).

Regarding claims 4 and 10, *Chen* discloses a method and system for processing a video image, comprising:

"extracting at least one image from the video signal" – codec CD1 separates the digitized video and audio signals into the digital video and speech components (column 2, lines 6 to 11);

"detecting at least one feature in said at least one image" – a feature extraction module FE1 extracts mouth information visemes containing the mouth shape and mouth location from the decoded video signal (column 2, lines 21 to 39: Figure 1);

"analyzing the parameters of said feature" – mouth deformation module MD1 receives inputs from the video signal and information from the feature extraction module FE1, and visemes from lookup table LT1 (column 2, lines 21 to 39: Figure 1);

"correlating at least one acoustic identification to the parameters of said feature" – a viseme is selected from lookup table LT1 that matches features extracted by feature extraction module FE1 (column 2, lines 21 to 39: Figure 1).

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Regarding claims 5 and 7, *Chen* discloses speech recognition is at the level of phone groups, corresponding to similar mouth shapes ("articulatory type") rather than individual phonemes (column 3, line 64 to column 4, line 5); similarly, *Braida et al.* processes phones according to context classes (column 8, line 43 to column 9, line 12: Table 2).

Regarding claim 8, *Chen* discloses speech recognition is at the level of phone groups, corresponding to similar mouth shapes ("articulatory type") rather than individual phonemes (column 3, line 64 to column 4, line 5); similarly, *Braida et al.* processes phones according to context classes (column 8, line 43 to column 9, line 12: Table 2); *Chen* discloses feature extraction module FE1 extracts mouth information visemes containing mouth shape ("a facial feature") (column 2, lines 18 to 31).

Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Chen* in view of *Braida et al.* as applied to claim 1 above, and further in view of *Basu et al.* ('885).

Concerning claim 2, *Braida et al.* discloses a Viterbi search for purposes of phone recognition (column 6, lines 59 to 61; column 7, lines 51 to 53), but omits utilizing a Viterbi search for purposes of synchronization. However, it is well known that a Viterbi algorithm is utilized for both recognition and time warping alignment. *Basu et al.* ('885) teaches a method of aligning phonemes and visemes with a Viterbi algorithm. (Column 1, Lines 53 to 67) It would have been obvious to one having ordinary skill in the art to utilize a Viterbi algorithm as suggested by *Basu et al.* ('885) in the

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synchronization method and system of *Chen* for the purpose of aligning phonemes and visemes more accurately.

Regarding claim 6, *Chen* discloses speech recognition is at the level of phone groups, corresponding to similar mouth shapes (“articulatory type”) rather than individual phonemes (column 3, line 64 to column 4, line 5); similarly, *Braida et al.* processes phones according to context classes (column 8, line 43 to column 9, line 12: Table 2).

### ***Response to Arguments***

Applicants’ arguments filed 07 June 2004 have been fully considered but they are not persuasive.

Firstly, Applicants argue that the limitation of “without altering the video content” is not new matter. Applicants point to the Specification, Page 9, Lines 14 to 16, and Page 10 to Page 11, as disclosing a visual speech recognition component comprising time-stamped articulatory types, which have been identified from the audio input. Applicants state that the original signal content, be it the original video content or the original audio content, is not changed by the acoustic identification time stamping. Applicants agree that the video signal is altered by the inclusion of time stamped audio identifications, but maintain the video content of the signal is unaltered by the inclusion of the time stamped acoustic identification. Applicants acknowledge that the term “original video content” is not found in the Specification. However, Applicants assert that it is inherent that a video signal has video content, and that it is well known that



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time stamping may alter the video signal but does not alter the video content of the video signal. This position is traversed.

Applicants' Specification, as originally filed, does not expressly disclose anything about "without altering the video content". The Specification does not expressly disclose anything about the video content being unaltered at Page 9, Lines 14 to 16, and Page 10 to Page 11. Applicants admit that the cited sections do not expressly disclose anything about unaltered video content. Applicants admit the cited sections disclose only time-stamping. Thus, if the Specification does not expressly disclose "without altering the video content", then Applicants must rely upon inherency to show the recited feature.

However, one skilled in the art would not find it inherent that video content is unaltered by time-stamping. Applicants merely assert, without proof, that time stamping does not change original audio or video content. The Specification does not draw any distinction between video content and a video signal. Instead, Applicants are relying upon semantic differences between the terms "video content" and "video signal", but any semantic differences are unclear. It would not be immediately clear to one skilled in the art that time-stamping necessarily produces an unaltered video content. Depending upon how time-stamping is performed, altering of video content may occur. Timing information from time-stamping may be displayed as an overlay on the video signal, or time-stamping information may be multiplexed within a frame of video content. Further, if time stamping alters a "video signal", then one skilled in the art may conclude that it also alters the "video content" because "video content" and "video signal" are

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synonymous terms that may be used interchangeably. Moreover, it is unclear to what degree time-stamping would ever alter audio or video content within the context of the prior art under Applicants' interpretation. Importantly, even if one were to agree that time-stamping does not alter the video content, it does not follow that it is inherent that the video content could never be altered by other means in combination with time-stamped synchronization (e.g. by synchronizing added video subtitles to audio content in a foreign movie). Thus, one skilled in the art would not find that the limitation "without altering the video content" is either expressly or inherently disclosed by the originally filed Specification.

Secondly, Applicants argue the claims are unobvious over a combination of *Chen* and *Braida et al.* because *Chen* alters the original video content, whereas Applicants' invention presents the original video content synchronously with the audio. Applicants draw a distinction between a live video signal and a different video signal comprising visemes fetched from storage, and say that *Chen* discloses a non-synchronous live video signal that is "covered up" in order to appear synchronous. This position is not convincing for the following reasons.

Applicants are predicated patentability on a feature that is new matter. The Specification does not either expressly or inherently disclose an unaltered video content so as to distinguish over *Chen*.

Furthermore, whether the video signal in one embodiment of *Chen* is a real or artificial video signal is not material to the invention as claimed. *Chen* does not anywhere describe a video signal as either artificial or live. It is merely Applicants'

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characterization of the video signal as “live” in *Chen*. It is true that *Chen* overlays stored visemes corresponding to phonemes over a streaming videophone display in order to make the display appear synchronous with the audio for one embodiment. Thus, one could say that there are “live” and “artificial” components to the video signal of *Chen*. However, *Chen* does disclose acoustic identification of audio content and time-stamping to synchronize video and audio signals. At least any “live” component of a video signal is unaltered, even though visemes are overlaid. Nor would it be clear to one skilled in the art that a video content is altered *Chen*, as the scope is unclear as to what constitutes being altered. It is not material to the invention as claimed that an additional feature of producing an “artificial” component to a video signal is disclosed by *Chen*. Nor can it be said that adding an “artificial” component to a video signal changes the principle of operation for *Chen*. The claimed features of synchronizing an audio signal and a video signal with acoustic identification of audio content is disclosed by *Chen*, even if an additional feature of overlaying visemes is also present.

Finally, Applicants maintain the Specification, Page 13, Line 3 to Page 14, Line 3, enumerates eight representative applications of the invention.

However, applications of an invention do not show unexpected results. Applicants have not provided any nexus between the eight representation applications and any unexpected results so as to provide evidence for patentability.

Therefore, the rejections of claims 1 to 10 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, of claims 1, 3 to 5, and 7 to 10 under 35 U.S.C. 103(a) as being unpatentable over *Chen* in view of *Braida et al.*,

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and of claims 2 and 6 under 35 U.S.C. 103(a) as being unpatentable over *Chen* in view of *Braida et al.* as applied to claim 1 above, and further in view of *Basu et al.* ('885), are proper.

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Morishita and Kerr disclose related art.

**THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

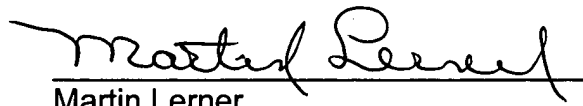
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (703) 308-9064. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Martin Lerner  
Examiner  
Art Unit 2654